User’s Manual

TeleEye RN684 / RN688 / RN6816

TeleEye
www.TeleEye.com

Before using the product, please
read this manual carefully.

00P3DG090TSEB2

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Version 2.1

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No liability is assumed for incidental or consequential damages in connection with or arising out of the use of the information or accessories contained herein.

Features and specifications are subject to change without prior notice.

Caution and Preventive Tips

- Switch the 115/230V selector to your local voltage standard
- Handle with care, do not drop the unit
- Mount the unit in an equipment rack or place it on a solid, stable surface.
- Indoor use only. Do not place the unit in a humid, dusty, oily, or smoky site.
- Do not place it in an area with poor ventilation or in an area close to fire or other sources of heat. Doing so may damage the unit as well as cause fire or an electric shock.
- When cleaning is necessary, shut down the system and unplug the unit from the outlet before uncovering the top cover. Do not use liquid cleaners or aerosol cleaners. Use only a damp cloth for cleaning.
- Always shut down the system prior connecting or disconnecting accessories, with the exception of USB devices.
- Lithium battery: Danger of explosion if battery is incorrectly replaced. Replace with the same or equivalent type of batteries recommended by the manufacturer. Dispose used batteries according to the battery manufacturer's instructions.

This symbol intends to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This symbol intends to alert the user to the presence of unprotected "Dangerous Voltage" within the product's enclosure that may be strong enough to cause a risk of electric shock.

Important Information

Before proceeding, please read and observe all instructions and warnings in this manual. Retain this manual with the original bill of sale for future reference and, if necessary, warranty service. When unpacking your unit, check for missing or damaged items. If any item is missing, or if damage is evident, DO NOT INSTALL OR OPERATE THIS PRODUCT. Contact your dealer for assistance.

Rack Mounting

Consult with the supplier or manufacturer of your equipment rack for the proper hardware and procedure of mounting this product in a safe fashion. Avoid uneven loading or mechanical instability when rack-mounting units. Make sure that units are installed to get enough airflow for safe operation. The maximum temperature for rack-mounted units is 40 °C. Check product label for power supply requirements to assure that no overloading of supply circuits or over current protection occurs. Mains grounding must be reliable and uncompromised by any connections.

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1. Overview

The Proficient MPEG-4 Series DVR is an integrated digital video recorder that combines the features of a time-lapse audio / video recorder, a multiplexer, and a video server to create a single security CCTV solution.

Its outstanding triplex operation enables users to view live or playback recorded video, remotely access through network simultaneously while recording other video, and to view wanted recorded video instantly by entering the time and date or selecting recorded video from the event list.

The DVR series unit includes the remote viewing and configuration software that is a Web-browser plug-in, allows user to view live or recorded video images and enables remote configuration. The remote software is stored in the DVR series unit and deployed over a LAN, WAN or Internet connection to remote Windows-based computers. This simplifies the installation and maintenance of the software components so all remote users are kept up to date.

The DVR series unit offers advanced features not typically found in standard multiplexers; it integrates the full features of a DVR, multiplexer and video server (by using the remote software). The key features of the DVR series unit are listed as follows.

Advanced Functions

- Triplex Operation: Live /Playback, Record, Network
- Supports up to 2 internal HDDs
- Supports internal CD-RW
- Supports NTP for time synchronization
- Supports Mobile View software
- Multi-language support
- Multiple built-in dome camera control protocols
- Supports Pre-Alarm Recording
- Motion Detection Marker
- Remote software for remote monitoring

Human Technology:

- ez**Burn™** for quick video export
- ez**Record**™ for quick recording setting
- ez**DDNS**™ for automatic DDNS configuration
- IR Remote Control (Optional)
- Compact Control Keyboard (Optional)

2. System Setup

The notices and introduction on system installation will be described particularly in this chapter. Please follow the description to operate the unit.

In order to prevent the unit from data loss and system damage that caused by a sudden power fluctuation, use of an Uninterruptible Power Supply (UPS) is highly recommended

2.1 Position the Unit

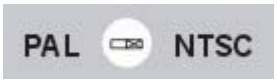
First, note to position / mount the DVR series unit in a proper place and be sure to power off the unit before making any connections. The placed location should avoid hindering or blocking the unit from airflow. Enough airflow is needed to protect the unit from overheating. The maximum allowable temperature of operating environment is 40°C.

The unit utilizes heat-conducting techniques to transfer internal heat to the case, especially to the bottom side of the unit.

NOTE: Be sure the rubber feet are not removed, and always leave a space for air ventilation on the unit's bottom side.

2.2 Selecting Video Format

The DVR series unit is designed to operate under either NTSC or PAL video formats. The switch is positioned on the rear panel.



2.3 Connecting Devices to the Unit

This section lists some important notices that should be read before making any connection to the DVR series unit.

Connecting Required Devices

Before power up the unit, you should connect cameras and a main monitor to the unit for basic operation. If needed, connect a call monitor for displaying full screen video of all installed cameras in sequence.

Connecting Short-term Device

If you plan to install any short-term devices to the DVR series unit and use them as part of the unit system, such as USB CD-ROM, USB Hard Disk Drive, etc, make sure those devices are connected only after the unit is powered up. The reason is because the DVR series unit can recognize the external devices only after the power-up process is done completely.

2.4 Rear Panel Connections

There are various connectors on the rear panel for the DVR series unit installations. The following figure shows the connectors by name; and followed by the detailed description of each connector.

Main Monitor (BNC/ VGA)

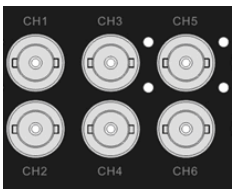
BNC and VGA output connectors are offered for connecting to a main monitor. The main monitor displays live image and playback recorded video in either full-screen or split-window format. VGA output connector is optional.

Call Monitor(for 8ch and 16ch Models only)

The call monitor is used to display full screen video of all installed cameras in sequence. The BNC call monitor connector allows user to connect the DVR series unit with an optional call monitor.

Video Input

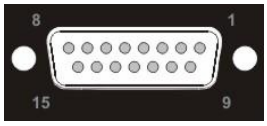
16 BNC connectors are offered for video input streams from installed cameras. The number of connectors is equal to the number of channels.



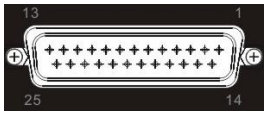
Alarm I/O & RS485

The unit provides an alarm I/O and RS485 port that offers user the flexibility required to connect the unit to the other device. The definitions for pins varies when the DVRs have different channels. Refer to ***Setup Guide*** for detailed pin definitions.

4ch model



8ch/16ch models



LAN Connector (RJ-45)

The DVR series unit is capable of networking. The LAN port opens the door of the DVR series unit to Ethernet where by the Internet.

Power Jack

The DVR series unit has a free voltage DC power connection jack. Please connect the power adapter that ships with the unit.

Audio In / Out

The DVR series unit provides two channels of audio recording and playback. Audio In RCA connector is offered for connecting an audio source device (e.g. external amplified microphone) to the unit; Audio Out RCA connector is offered for connecting an audio output device (e.g. amplified speakers) to the unit.

3. General System Setup

The DVR series unit allows user to access some general operations through the front panel easily. The following subsections introduce the general operations of the unit.

The regular displayed OSD information and its displayed positions are shown as following figure. The channel title will be displayed on the top-left side of the window, either in full screen mode or in multiple channel mode. The current operating mode, including Call mode, Dome-Control mode, Playback mode. Freeze mode and Sequence mode, will be displayed on the bottom-left side of the screen. And the date/ time information will be display on the bottom-right side.

3.1 Front Panel Introduction

The front panel controls enable user to control the unit and preset the programmable functions.

3.1.1 LED Definition

The LEDs on the front panel of the DVR series unit are described as follows.

Power LED (Green)
The LED lights up when the correct power is connected to the unit.

Alarm LED (Red)
The LED lights up when an alarm is triggered.

REC LED (Green)
The LED blinks while the DVR series unit is recording.

Network LED (Green)

The LED lights up when the DVR series unit is connected to a network and blinks when the data is being transferred.

3.1.2 Function Keys

This section describes the functional keys, which are for normal operation, on the front panel of the DVR series unit.

Please refer to the ***Setup Guide*** for the graphical illustration of functional keys.

CHANNEL

- In both Live and Playback modes, press the CHANNEL key to view the corresponding video in full screen. The number of the CHANNEL keys corresponds to the number of cameras supported by the unit.
- In dome control mode, the key "1" is used to access the Set/Go preset menu; the key "2" is used to hide or display the dome setting parameters.

DOME

Press the key to enter dome control mode. Please refer to Section **Dome Control** for detailed controlling operation.

MODE

Press repeatedly to select for wanted main monitor display format. There are four available view modes: full screen, 4-window (2×2), 9-window (3x3), and 16-window (4x4). Refer to Section **View Modes** for detailed information.

SEQ (Sequence)

Press to start automatic sequencing of the video coming from the installed cameras.

MENU

Press this key to call the OSD setup menu.

ESC

Press to cancel or exit from certain mode or OSD setup menu without changing the settings made previously.

ZOOM/ENTER

- In OSD menu or selection interface, press this key to make the selection or save settings.
- In live full screen view mode, press this key to view a 2× zoom image; press it again to exit zoom mode.

COPY

In Playback mode, press COPY to select the start and end point of the video you want to export. Refer to Section **Video Export** for detailed information.

PLAY/STOP

Press this key to switch between live image and playback video.

NOTE: The video of latest 5 ~ 10 minutes cannot be played back because the video is still saved in the buffer.

FREEZE

- Press FREEZE while viewing live image, the live video will be frozen. The date / time information shown on the monitor will continue updating. Press FREEZE again to return to live mode.
- Press FREEZE while playing the recorded video, the playback video will be paused. Press LEFT / RIGHT to move the recorded video reverse / forward by single step. Press FREEZE again to continue playing video.

SEARCH

In both Playback and Live mode, the user can press SEARCH to call the Search menu for searching and playing back recorded video by date and time or events.

Direction Keys

- In Zoom mode, these keys function as Direction keys.
- In the OSD menu, the LEFT/ RIGHT keys are used to move the cursor to previous or next fields. To change the value in the selected field, press UP/ DOWN.

3.2 Power Up / Down the Unit

If you must shut down the DVR series unit for any reason, please use the proper shut down and power up procedures to avoid damaging your DVR unit.

To Power Up the Unit

Simply plug in the power adapter that came with the package and the DVR will start to boot.

The color bar and system checking information will be shown on the monitor and then disappear when the unit has been completely powered up.

To Restart / Shutdown the Unit

Press MENU and input the administrator password to access the OSD Main menu. Select <Shutdown> in Main Menu and press ENTER to enter the Shutdown menu, which displays as follows.

Shutdown	
1. Power Off	Execute
2. Reboot	Execute

<Power Off>

Select this item to shut down the unit. Do not remove the power during shut down until the message "You can safely turn off DVR now!" displays.

<Reboot>

Select this item to reboot the unit. The color bar and system checking information are displayed on the monitor until the unit is completely restarted.

3.3 Entering OSD Setup Menu

The OSD Main menu contains a list of items that are used to configure the DVR series unit. To enter the Main menu, press MENU and then enter Administrator or User password. The Password Verification screen displays as follows.

Password Verification

_____

Press Channel Keys To Enter Password
(4-8 Digits)
Press ◄ Key To Delete

The default passwords are shown in the following table. The same passwords are used for entering the remote viewing software Dyna**Remote** Lite.

Administrator Password	User Password
1 2 3 4	4 3 2 1

NOTE: It is strongly suggested to change the passwords to prevent unauthorized access to the unit.

After entering the correct password, the Main menu is displayed.

Main Menu

1. System Setup
2. Monitor Setup
3. Camera Setup
4. Record Setup
5. Sequence Setup
6. Event Setup
7. Database Setup
8. Configuration
9. Shutdown

Move the cursor up / down over the OSD items using the Direction keys and press ENTER to enter the selected sub-menu.

3.4 System Date / Time Setting

User can set the current date, time and other OSD parameters in Date/Time menu (under System Setup Menu). The administrator's privileges are required for entering the submenu. In OSD Main menu, select <System Setup> and press ENTER, then select <Date/Time> to access the Date/Time menu; the menu displays as follows.

Date/Time

1. Date	2005/02/21
2. Time	PM10:39:26
3. Time Zone	OFF
4. Date/Time Display	1 Row
5. Date Display Mode	Y/M/D
6. Time Display Mode	24 HR
7. Date/Time Order	Date First
8. Daylight Saving Time Setup	
9. Network Time Protocol Setup	

3.4.1 Set Date / Time

Set Date / Time

Select <Date> / <Time> and press ENTER for adjusting the settings. LEFT / RIGHT keys are used to move the cursor to previous or next field, ENTER is for selecting, and UP / DOWN are used to change the value in the selected field.

NOTE: The new date / time setting applies to record new video. The date and time of previously recorded video will not be changed.

NOTE: If you have to change time settings in any case, we strongly recommend you to format the HDDs to avoid database corruption.

Date / Time Display

Users are allowed to set the time OSD displays in 1 or 2 rows. Use the UP / DOWN keys to change the setting. The default is to display the time OSD in one row.

Date Display Mode

This function allows user to set the OSD display type of the date. There are three options to select from: <Y/M/D>, <M/D/Y> or <D/M/Y>. "Y" represents "Year", "M" represents "Month" and "D" represents "Day".

Move to the item and press ENTER, the option starts blinking. Use UP / DOWN keys to change the setting. The default setting is <Y/M/D> in both NTSC / PAL formats.

Time Display Mode

User can set the time format to <12 hour> or <24 hour>. Use the UP / DOWN keys to change the format. The default setting is <12 hour>.

Date / Time Order

The item is used to set the order of date / time display to <Date First> or <Time First>. Use UP / DOWN keys to change the setting.

3.4.2 Daylight Saving Time

Daylight Saving Time

The item is for those people who live in certain regions to observe Daylight Saving Time. Select <ON> to enable, or <OFF> to disable the function.

If the function is disabled, the DST Start / End time and DST Bias will be grayed out and cannot be accessed.

NOTE: If this function is enabled, the date/time information will be shown on the screen with a DST icon when playing back recorded video or searching video in the event list. "S" indicates summer time and "W" indicates wintertime.

DST Start / End

The items are used to program the daylight saving duration. Use LEFT / RIGHT keys to move the cursor to the next or previous field, UP / DOWN to change the settings in the selected field.

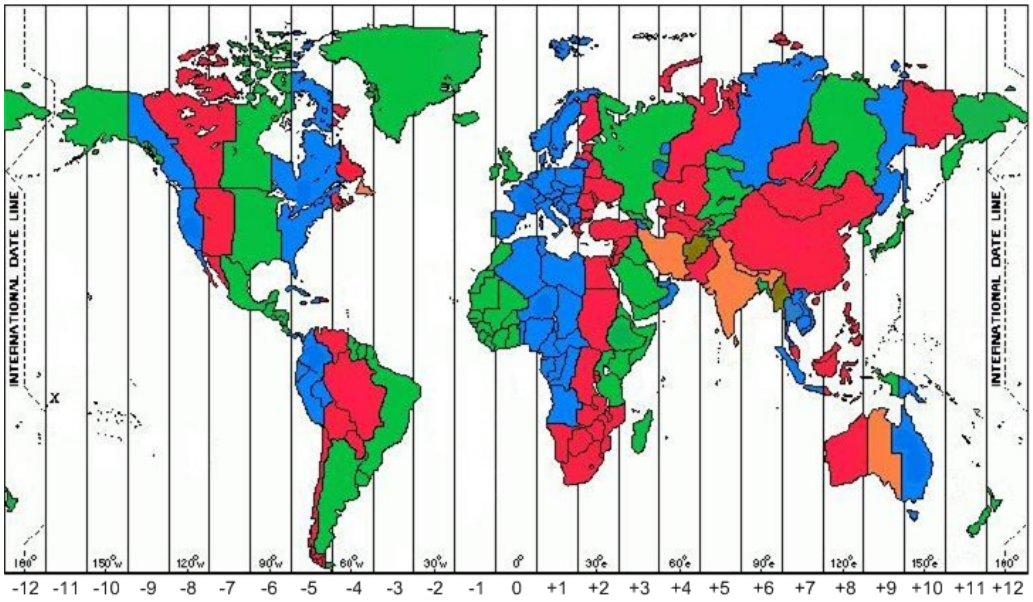
DST Bias

The item allows user to set the amount of time to move forward from the standard time for daylight saving time. The available options are <30>, <60>, <90> and <120> minutes.

3.4.3 Network Time Protocol Setup

Time Zone

Select <**Time Zone**> to enter the time zone. To find out your local time zone, please visit www.greenwichmeantime.com or refer to the following figure.



NOTE: The <**Time Zone**> must be set to your local time zone or the <**Network Time Protocol Setup**> will not be accessible.

Network Time Protocol Setup

After entering the time zone, the <**Network Time Protocol Setup**> option will appear. Select the <**Network Time Protocol Setup**> to set the time server. The default time server is time.nist.gov, but the user can change it to other time servers when desired. A list of IP addresses of the time servers is listed below.

129.6.15.28	129.6.15.29	132.163.4.101
132.163.4.102	132.163.4.103	128.138.140.44
192.43.244.18	131.107.1.10	69.25.96.13
206.246.118.250	208.184.49.9	64.125.78.85
207.200.81.113	64.236.96.53	68.216.79.113

After the time server is set, select <**Manually Time Sync**> to sync the time. The time sync can also be updated periodically. Select <**Automatically Time Sync**>, and the time will be automatically synced once an hour.

3.5 Record Schedule / Quality Setting

The Record Setup menu allows user to set recording quality, recording schedules, and other recording parameters. Administrator's password is required to access Record Setup menu. In the Main menu, move the cursor to <Record Setup> and press ENTER; the following menu is displayed.

Record Setup	
1. Record Mode	720×240@60PPS
2. Schedule Setup	
3. Preset Config	
4. ezRecord Setup	Standard
5. Circular Recording	ON
6. Purge Data	

3.5.1 Schedule Setup

The Schedule Setup is used to set the day and night time, or weekend recording schedule. Select <Schedule Setup> from the Record Setup menu and press ENTER; the following menu is displayed.

Schedule Setup	
1. Day Time Start	AM 06:00
2. Day Time End	PM 06:00
3. Night Time Start	PM 06:00
4. Night Time End	AM 06:00
5. Weekend Schedule	YES
6. Weekend Start	Fri 18:00
7. Weekend End	Mon 06:00

- Make appropriate changes of the start time of Day and Night Time using Direction keys.
- Press ENTER to confirm the settings or ESC to cancel.
- If you want to have a weekend record, choose <YES> to enable the Weekend Schedule in advance and then set the Weekend Start/End time.
- Press ESC to return to previous page.

3.5.2 Preset Record Configuration

The <Preset Config> is used to select the preset recording quality and frame rate. In normal circumstances, we strongly suggest you set the item to <Standard>, the default. Below table shows the PPS and picture size under <Standard> in Half-D1 mode. Please refer to OSD Menu Setup Guide, Section **Preset Record Configuration** for more detailed information.

Halfl-D1 mode (NTSC: 720x240@60PPS; PAL: 720x288@50PPS)			
Normal PPS	**Normal Size**	**Event PPS**	**Event Size**
3.75 NTSC (3.125 PAL)	**11 KB**	**15 NTSC (12.5 PAL)**	**17 KB**

3.5.3 To Record Event Video Only

If you want your DVR unit to start recording only when the alarm is triggered, follow the steps:

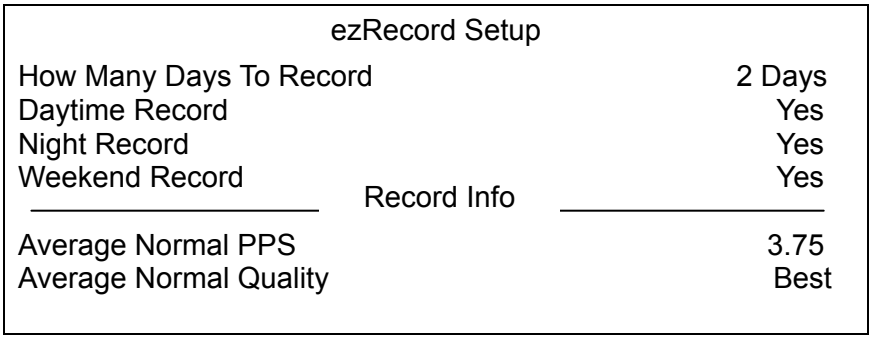
- Enter the OSD setup menu with correct password.
- In the OSD setup menu, select <Record Setup> menu. Move the cursor to the item <Preset Config>, and select <Event only>.

Refer to OSD Menu Setup Guide, Section **Preset Record Configuration** for more detailed information.

3.5.4 ezRecord Setup

This item aims to ease the complicated record settings, and to make the setup much easier. Note that the item can be reached only when you select <ezRecord> as the option for <Preset Config>.

Select <ezRecord Setup> from <Record Setup> and press ENTER, the sub-menu appears as below figure:



Follow these steps to Setup ezRecord:

- Select <How Many Days To Record> and press ENTER, then press UP/DOWN to choose an option. The average normal PPS & Quality will be adjusted automatically. The maximum of days depends of the size of your HDD. In other words, the larger the size of the HDD installed, the more days the unit can record.
- Move to <Daytime Record> and press ENTER. This item is for you to select whether you want the DVR to record during daytime. If yes, use UP/DOWN to select <Yes> as to enable day time recording; or select <No> to disable.
- Repeat the same procedures through the 3rd and 4th item, respectively. Note that <Weekend Record> will be inaccessible if you select <NO> for the item <Weekend Schedule> in <Schedule Setup>.
- Select <Average Normal PPS> and press ENTER, then press UP/DOWN to make a choice. The <How Many Days To Record> will be computed automatically.
- Select <Average Normal Quality> and press ENTER, then press UP/DOWN to make a choice. The <How Many Days To Record> will be computed automatically.

NOTE: The current number of connected cameras will affect the recording quality automatically calculated through the <ezRecord Setup>. Therefore, once you disconnect cameras or connect more cameras to the unit, you should reset the <ezRecord Setup>.

3.5.5 Circular Recording

User can choose to record video in circular mode or in linear mode. If you choose to record in circular mode, then the unit begins to stores new video into the HDD spaces and overwrite the oldest recorded video. If you choose to record in linear mode in stead, the unit stops recording when the HDD is full, and the internal buzzer starts beeping.

From the Record Setup menu, move the cursor to <Circular Recording> and press ENTER, then select <ON> / <OFF> using UP / DOWN keys.

3.5.6 Purge Data

This item is used to delete the Normal or Event recording video. In Record Setup menu, move the cursor to <Purge Data> and press ENTER; the Purge Data menu is displayed.

Purge Data	
1. Purge All Data	NO
2. Purge All Event Data	NO
3. Purge Event Before	2005/01/01
4. Start to Purge	NO

- Purge All Data

The item is used to delete all recorded video from database(s). Set this item to <YES> using UP / DOWN keys, and start the deleting by enable (YES) the <Start to Purge> function.

- Purge All Event Data

The item is used to delete all event video from database(s). Using UP / DOWN keys to select <YES> and start the deleting by setting the <Start to Purge> to <YES>.

- Purge Event Before

The item is used to delete event video before a specific date. Use LEFT / RIGHT keys to move the cursor to next or previous field, ENTER to select the item and UP / DOWN to adjust the value.

- Start to Purge

After selecting the video you want to delete or setting the date for deletion, set this item to <YES> for start the deleting or choose <NO> to cancel.

4. Basic Operation

The DVR series unit allows user to access some general operations through the front panel easily. The following sections introduce the general operations of the unit.

4.1 Viewing Live / Playback Video

The general functions in live and playback mode are described in the following sections.

4.1.1 Viewing Modes

The DVR series unit provides user versatile ways of viewing both live and recorded video. Following presents these view formats.

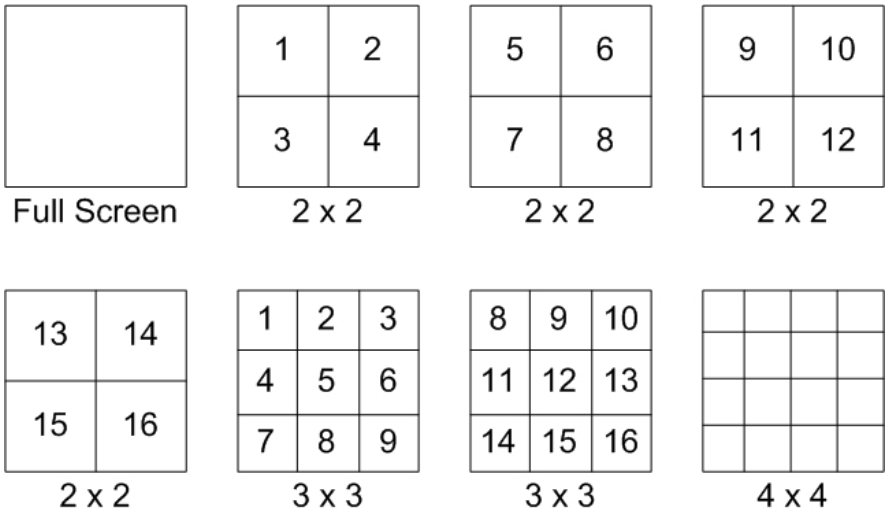
Viewing in Full Screen

Press any CHANNEL key directly to view the corresponding camera image in full screen format.

Viewing in Multi-window

Various multi-window view formats are offered for selection. To switch between available viewing formats, press MODE repeatedly.

The available view formats are illustrated as the following figure.



4.1.2 Digital Zoom

Users are able to view a 2× full screen in live mode. To view the 2× full screen, follow the steps.

- Press a CHANNEL key to view the corresponding camera in full screen.
- Press ZOOM to enter a 2× full screen zoom mode of the selected camera.
- If you need to view specific area of the 2× zoomed screen, use Direction keys to pan / tilt the zoomed area around the original image.
- Either press ZOOM again or ESC to leave the zoom mode.

4.1.3 Viewing Live Cameras

Users are allowed to view live camera in versatile viewing modes, including full-screen, 2×2, 3x3 and 4×4. The general operation under live mode is described as follows.

To Freeze Live Image

Press FREEZE while viewing live image, the image pauses but the date / time information does not, and the system clock continues running.

Press FREEZE to pause the live image; press FREEZE again to resume the live camera view.

4.1.4 Viewing Recorded Video

To view recorded video, user can press PLAY/STOP key directly. When press the PLAY/STOP key, the unit starts to continue playing back the recorded video from the suspended point of record. If it is the first time to use the PLAY/STOP key, the unit will playback from the very beginning of the record. Alternatively, user can select records from the Search menu to play specific video. Refer to OSD Menu Setup Guide, Section **Searching Recorded Video** for more information.

The Forward or Reverse speed indicator will be shown on the bottom-left of the screen, when in the playback mode.

The general operations in playback mode are described as follows.

Key Usage in Playback

The key usage is slightly different in playback mode. Following is the key usage found in playback mode.

- **LEFT** (Reverse Playback)
  The key is used to reverse the recorded video while the unit is playing back. Press the key repeatedly to increase the speed of reverse playback by 1×, 2×, 4×, 8×, 16×, or 32×.

- **RIGHT** (Forward Playback)
  The key is used to play the recorded video fast forward. Press the key repeatedly to increase the speed of forward playback by 1×, 2×, 4×, 8×, 16×, or 32×.

- **FREEZE**
  Press FREEZE to pause the playback video. When the recorded video is paused, press LEFT / RIGHT to resume playback video single step reverse / forward, respectively. Press FREEZE again to continue playing video.

- **PLAY/STOP**
  Press it to start playing back video, exit current mode, or stop playing back video and return to live mode.

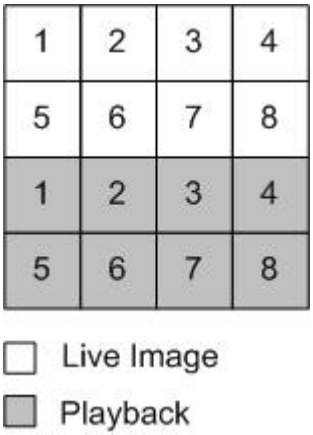
Pause Playback and Single Step Forward

To pause and resume recorded video, follow these steps.

- Press one of the CHANNEL keys to display the corresponding camera in full screen.
- Press FREEZE to pause the current playback image.
- Press RIGHT / LEFT Direction keys to move the video single step reverse / forward. Press and hold RIGHT / LEFT keys to repeatedly reverse / forward the video single step.
- Press FREEZE again to resume the playback operation.

Viewing Live Image in Playback Mode

Press the MODE key repeatedly in playback mode, a 16-window viewing mode contains both live and playback image appears. This viewing mode is illustrated as the following figure.



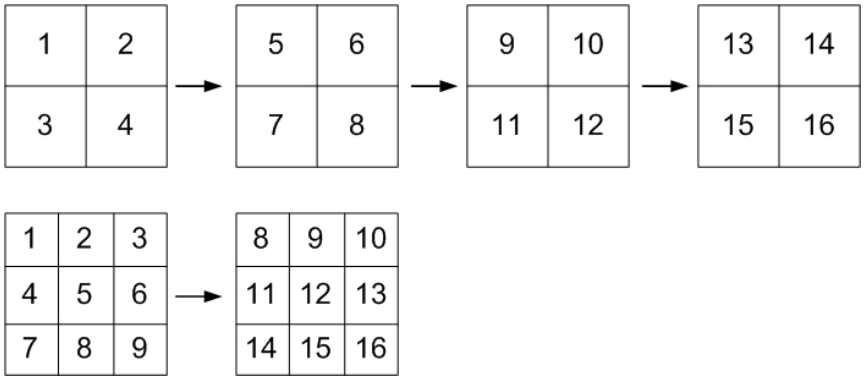
The eight windows on the top side of the screen playback the Live video from channel 1 to channel 8 respectively, and the other windows allow user to view Playback image from channel 1 to channel 8.

4.2 Sequence Setup

This section introduces the way to view sequence mode with both Main Monitor and Call Monitor, if connected. Sequence function can avoid manual backtracking and provides more flexibility while monitoring surveillance.

4.2.1 Sequence with Main Monitor

Automatic sequence function can be observed in any view mode. Select certain view format and press SEQ to toggle the automatic sequence; press ESC to stop sequencing. The figure below displays the 4-camera and 9-camera sequencing view modes.

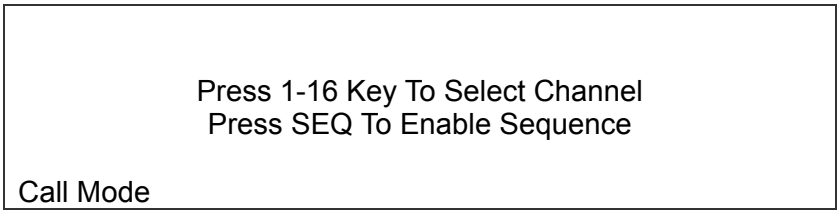


4.2.2 Sequence with Call Monitor (8ch and 16ch only)

Users are allowed to use the DVR series unit front panel to control a call monitor display without having to access the Main menu. Two viewing modes can be displayed on call monitor: Sequence display and Single camera display. To program the call monitor sequence, see OSD Menu Setup Guide, Section **Sequence Setup**.

Follow the steps to control the call monitor.

- Press the CALL key on the front panel to enter call monitor control mode. The message "Call Mode" will be shown on the bottom-left of the screen.

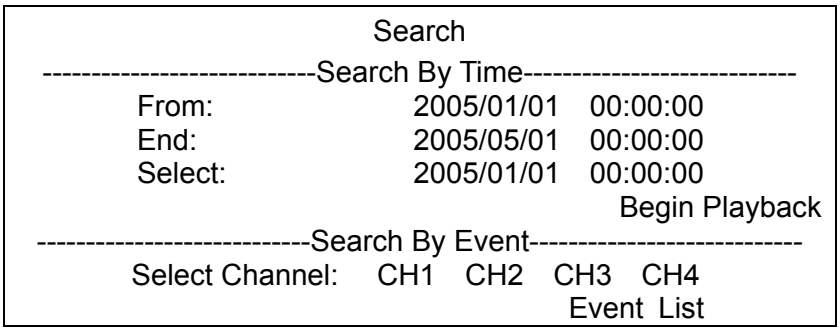


- Press CHANNEL key to display the associated camera on call monitor.
- Alternatively, press SEQ repeatedly to display the sequence of cameras previously programmed in Call Monitor Schedule menu.
- Press ESC to return the front panel to Main monitor control mode.

4.3 Searching Recorded Video

The DVR series is capable of searching and playing back recorded video by date and time or events. Entering the specific date and time of the wanted video, the unit will then search for the matched video and play it on the monitor. Alternatively, the user can search event video by selecting channel as well.

In live or playback mode, press SEARCH to enter the Search menu, which is shown as follows.



4.3.1 Searching by Time

Follow the steps to search video by date and time.

- Press SEARCH key to enter the Search menu; the From Time and End Time of the available video is listed on top of the screen. The value is unchangeable.
- Use Direction keys to move the cursor for setting the start time; adjusting the date and time values by UP / DOWN keys.
- Press ENTER to confirm the settings or ESC to abort.
- Move the cursor to <Begin Playback> and press ENTER to start playing back the selected video.
- Either press PLAY/STOP again or ESC to return to live video.

NOTE: If there is no available recorded video that matches your specified time and date, the unit starts playback from the next available video.

NOTE: The date/time information will be shown on the screen with a DST icon if the Daylight Saving Time function is enabled. "S" indicates summer time and "W" indicates winter time.

4.3.2 Searching by Event

"Event List" allows you to search wanted video by event. The Event List is displayed as below figure:

Event List

First Page

Date	Time	Ch.	Type
2005/03/17	11:26:50	2	Motion
2005/03/17	09:53:03	5	Alarm
2005/03/16	16:14:42	3	Alarm
2005/03/15	03:45:31	1	Motion
2005/03/12	22:27:56	1	Alarm
2005/03/12	10:09:29	7	Motion
2005/03/11	12:18:20	6	Motion
2005/03/10	05:16:00	4	Alarm
2005/03/08	17:11:37	2	Motion
2005/03/08	16:29:10	8	Motion
2005/03/08	03:22:17	2	Alarm

The list displays events by date, time, triggered camera and alarm type. As some events are deleted, others are displayed. The latest recorded event video will be listed on the top.

Follow these steps to search event video through Event List:

- Press SEARCH to enter the Search menu.
- To search event video that has been recorded on a specific camera, use LEFT / RIGHT to move the cursor and press ENTER to select or de-select a channel.
- Move the cursor to <Event List> and press ENTER to list the event video of the selected channels. The Event List displays.
- To exit the event list, press ESC.

Follow the steps to playback video from Event List.

- Press and hold UP / DOWN to scroll through the Event List.
- Press ENTER to play back the selected event record.
- Press PLAY/STOP to return to live mode.

4.4 Video Export

The unit allows you to export wanted video to the built-in CD-RW or an external device, such as a USB ThumbDrive®, and the exported video will be saved as *.drv file.

If you want to export video to an external device, make sure the device is has been connected to the DVR unit and the port has been set appropriately for video export.

NOTE: Once an external device has been connected to the DVR unit, the device has priority over the built-in CD-RW; which means that the wanted video will be exported to the external device instead of the built-in CD-RW.

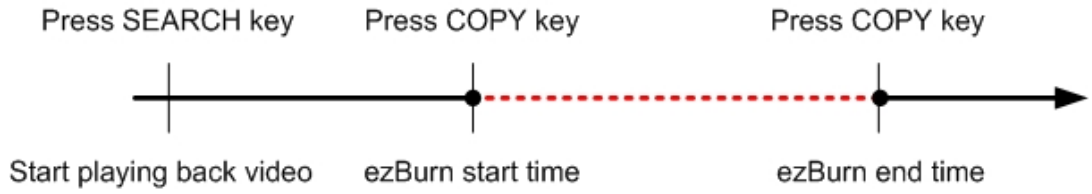
According to the size of video, the export may take about 10 minutes to 1 hour.

4.4.1 ezBurn Introduction

Built with the ezBurn technology, ezBurn function provides users the easier way to export desired video with built-in CD-RW or to an external device, such as an USB ThumbDrive®.

TWO keys (SEARCH and COPY) and THREE touches are all you need for completing the export. The entire exporting process will be done through the front panel, without needing to enter the OSD setup menu.

The ezBurn exporting process is illustrated as below figure:



The entire process is described step by step in the following sections.

NOTE: The file exported using ezBurn will be in .drv file format, and it can only be played using the remote player software.

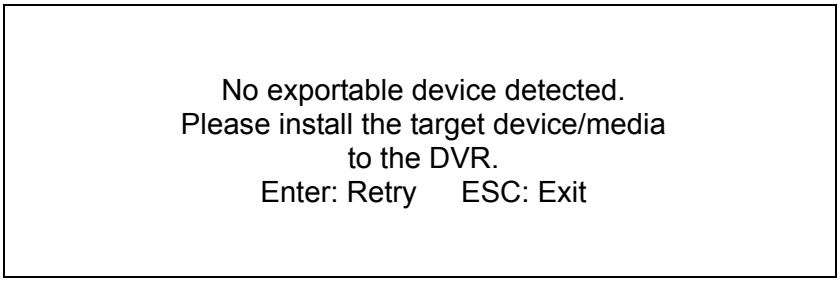
4.4.2 To Export Normal Video

To Export normal video to external device, follow these step:

- Press SEARCH and play wanted normal video by entering date and time. Note if you are viewing in multiple channel mode, please make sure there is no window displaying in Live mode. Otherwise, the export won't work.
- After entering playback mode, play the video and press COPY at the point that you want to start the export. The playback continues.
- Press COPY again at the point that you want to end the export. Then the "ezBurn" window will display as below figure. The information shown on the window is read only.

ezBurn confirmation
Selected Device: Built-in CD-RW
All data on the disc will be erased.
Exported Required Size = 11 MB
Real Export Range:
From: 2005/11/07 AM10:41:13
To: 2005/11/07 AM10:41:21
Enter: YES ESC: NO

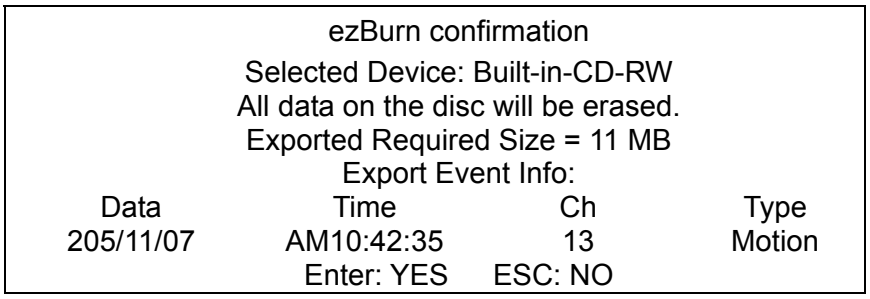
- Press ENTER to start the export; or, press ESC to abort.
- If there is no any exportable device connected to the DVR unit, then a warning message will be shown on the screen, as below figure:



4.4.3 To Export Event Video

To export event video, follow these steps:

- Press SEARCH and play wanted event video. To play event video, refer to Section **Searching Recorded Video**.
- After entering the playback mode, press COPY. The "ezBurn" window will display as below figure. The information shown on it is for read only.



- If there is no any exportable device connected to the DVR unit, a warning message will be shown on the screen
- Press ENTER to start the export the whole event video to the connected device; or, press ESC to abort.

4.5 Dome Control

The DVR series unit allows user to control a dome camera by the front panel.

In Live mode, user can press CHANNEL key to display the desired dome camera in full screen. To enter Dome Control mode, press the DOME key and press channel key 2 to display the hint screen; to exit the Dome Control mode and return to live mode, press ESC or DOME.

To configure the dome controls settings, see the following sections.

4.5.1 Dome Connection

Follow the steps to install dome camera.

- See ***Setup Guide*** for RS-485 port pin definition.
- Connect the R+, R- terminals on the dome camera to the D+, D- terminals on the RS-485 port by RS-485 cable respectively. Refer to the connection figure illustrated in ***Setup Guide***.

4.5.2 Dome Protocol Setup

The Dome Protocol item lists the available dome protocols for communicating with dome cameras connected to the DVR series unit. From the Main menu, select <Camera Setup> and press ENTER. The following menu is displayed.

Analog Camera	
1. Analog Camera Select	CH1
2. Dome Protocol	None
3. Dome ID	0
4. Camera Title	
5. Covert	NO
6. Brightness	0
7. Contrast	0
8. Saturation	0
9. Hue	0

To configure dome protocol, select a camera first and set the communications protocol associated with dome camera using the Direction keys and ENTER. The available protocol includes <DynaColor>, <Pelco D>, <Pelco P>, <AD422>, <Fastrax 2>, <JVC>, <Panasonic_C>, <Panasonic_N>, and <None> (default).

NOTE: The settings become effective after saving the changes and exiting from the menu.

4.5.3 RS485 Setup

The DVR series unit controls the domes via RS-485 communication protocol. The RS-485 parameters in the DVR series unit must be set to the same parameters set in dome camera.

Users are allowed to change the RS-485 settings of the DVR series unit. Select <System Setup> in Main menu, then select <RS485 Setup> from the System Setup menu and press ENTER. The following menu is displayed.

RS485 Setup	
1 Unit ID	224
2 Baud Rate	9600
3 Bits	8
4 Stop	1
5 Parity	None

The ID number must match the ID address set by the dome. The Unit ID is in the range of 1 to 255. The default ID is 224. Note that there cannot be any two devices on the same bus given the same ID address, or a conflict may occur.

The default RS-485 settings of the DVR series unit are 9600 Baud, 8 Data Bits, 1 Stop Bit and No Parity.

NOTE: The settings become effective after saving the changes and exiting from the menu.

4.5.4 Dome Controlling Keys

The functions of some keys in dome control mode are totally different from normal status function. Please refer to ***Setup Guide*** for the graphical illustration of functional keys.

Set / Go Preset

This key is used to enter the Dome Preset menu to set up certain position as a preset and go to the predetermined preset positions for viewing.

Toggle Hint Screen

This function is used to avoid viewing the dome parameter information while controlling dome camera. Press this key to hide the screen. Press it again to redisplay the screen.

Iris Open

Use to open the Iris on the dome camera.

Focus Near

Use to focus the dome camera near.

Zoom In

Use to zoom in the dome camera. This function enables the user to enlarge a certain area.

ESC

Use to leave dome control mode and return to live and full screen viewing mode.

Auto / Enter

- In OSD Menu mode, the key is used to make selection.
- In dome control mode, this key is used to activate automatic focus and iris function.

Iris Close

Use to close the Iris on the dome camera.

Focus Far

Use to focus the selected dome camera far.

Zoom Out

Use to zoom out the dome camera. This function enables the user to shrink the current image and view a larger area.

Pan / Tilt

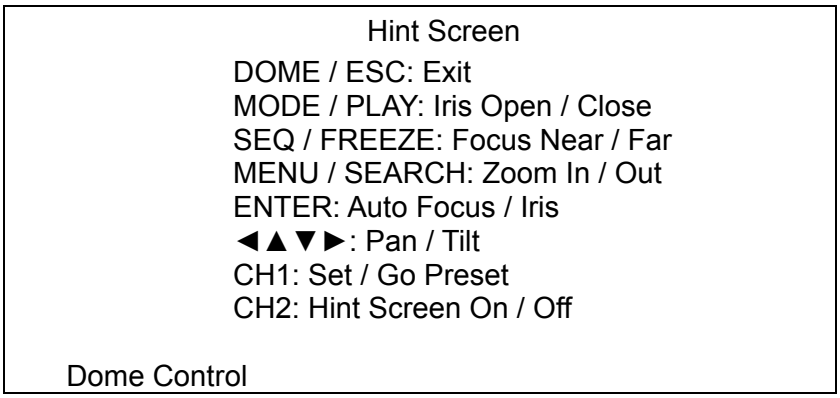
Use to pan and tilt dome camera.

4.5.5 Setting Preset Points

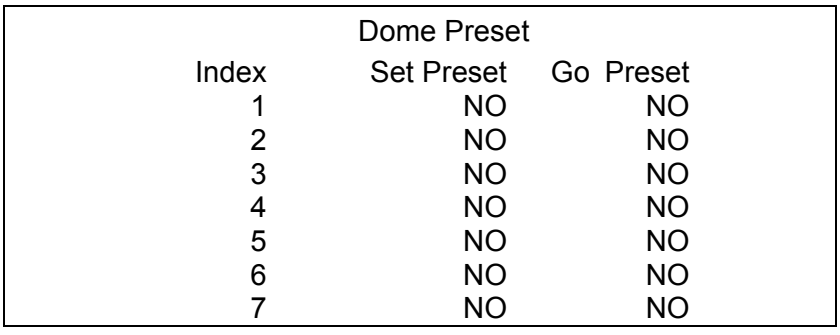
The DVR series unit allows user to set preset positions. The amount of preset points depends on the dome manufacturer.

Follow the steps to set preset points.

- Press a Channel key to view the corresponding camera in full screen.
- Then press DOME to enter dome control mode. And a Hint Screen shown as below figure displays on the screen.
- Press 2 to hide the dome control Hint Screen; press 2 again to toggle the Hint Screen.
- Use Direction keys to position the dome camera to desired position.



- Press 1 to access the Set/Go Preset function. The Dome Preset menu is displayed.



- Use UP / DOWN keys to select the desired preset number from the menu.
- Set the <Set Preset> of the selected preset number to <YES>, and press ENTER to save the position. Now the preset is set and ready to be called.

4.5.6 Calling Preset Points

Follow the steps to call preset points.

- Press a Channel key to view the corresponding camera in full screen.
- Then press DOME to enter dome control mode. Then a Hint Screen, shown as blow figure, will display on the screen.
- Press 2 to hide the dome control Hint Screen; press 2 again to toggle the Hint Screen.
- Press 1 to access the Set/Go Preset function.

	Dome Preset	
Index	Set Preset	Go Preset
1	NO	NO
2	NO	NO
3	NO	NO
4	NO	NO
5	NO	NO
6	NO	NO
7	NO	NO

- Use UP / DOWN keys to select the desired preset number from the menu.
- Set the <Go Preset> of the selected preset number to <YES>, and press ENTER to call the preset point.
- Now the selected dome camera rotates to the preset position automatically.

5. Remote Monitoring Software

The remote monitoring software is a remote browser-based software application designed to operate with the DVR series products. Using the software, users are allowed to view live and recorded video, and also to configure the DVR series units remotely via a LAN, WAN or Internet on your personal computer.

The DVR series unit automatically downloads the remote monitoring software plug-ins to the connected PC when you connect to the DVR series unit by entering the IP address of the unit in the address bar on the browser.

Due to the setting items are similar to those listed in the DVR's OSD setup menu, please refer to the sections above for setting configuration of the remote monitoring software.

The tasks can be performed with the remote monitoring software are listed below:

- Remote viewing of live/ recorded video
- Remote setup of the DVR series unit
- Remote control of dome cameras
- Alarm notification from the DVR series unit
- Up to five connections to one DVR series using the remote monitoring software, including one Administrator and four User operators

5.1 Remote Monitoring System Requirements

Items	Minimum Requirements
Personal Computer	Pentium-3 600 MHz processor (Pentium Celeron or Pentium-4 1.5GHz processor preferred) Minimum RAM 256 MB Hard Drive 20 MB available for software installation
Operating System	Windows XP, 2003 Windows 2000
Web Browser	Microsoft Internet Explorer version 6.0 or above
Monitor Resolution	Minimum 1024 x 768 with 16-bit color
Video Card	XVGA with 16 MB video RAM
Network Card	10Base-T (10 Mbps) or 100Base-TX (100 Mbps) operation; must match the network configuration

5.2 Getting Start of Installation

Refer to the following description to install the remote control software.

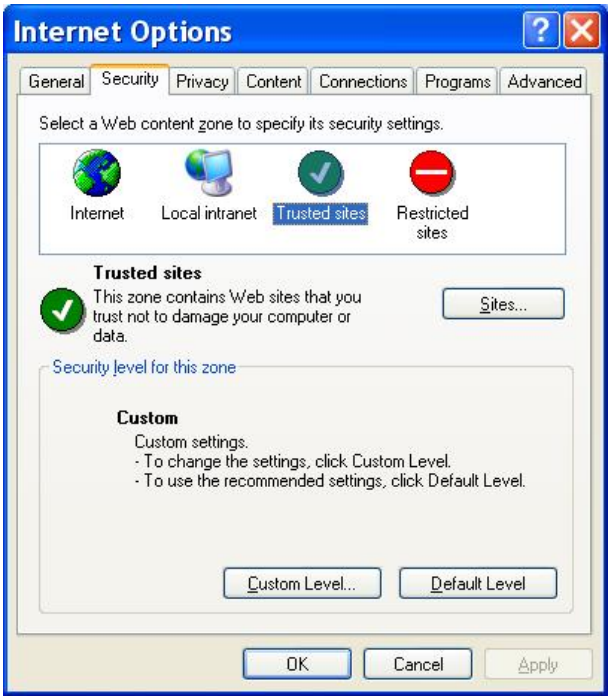
5.2.1 Changing Internet Settings

The PC you want to operate with the remote monitoring software should be set to accept ActiveX plug-ins. Please follow the steps to set the Internet security settings appropriately.

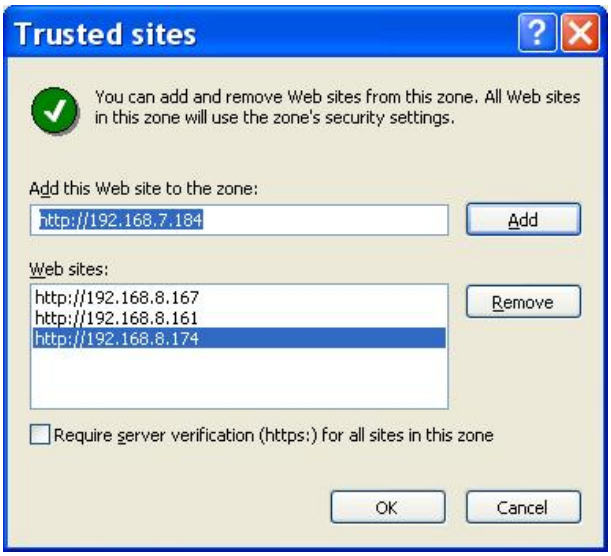
- Before operating the remote monitoring software, please check the IP address of your DVR series unit. To check the IP address, press MENU key on the unit and enter password to access OSD setup menu. Select <System Setup>, <Network Setup>, then <LAN Setup> to check the IP.
- Start the IE; you may start it either by clicking on the desktop icon, or by using the Start menu to access it.

NOTE: Windows IE provides the ActiveX component that is required when using the remote monitoring software.

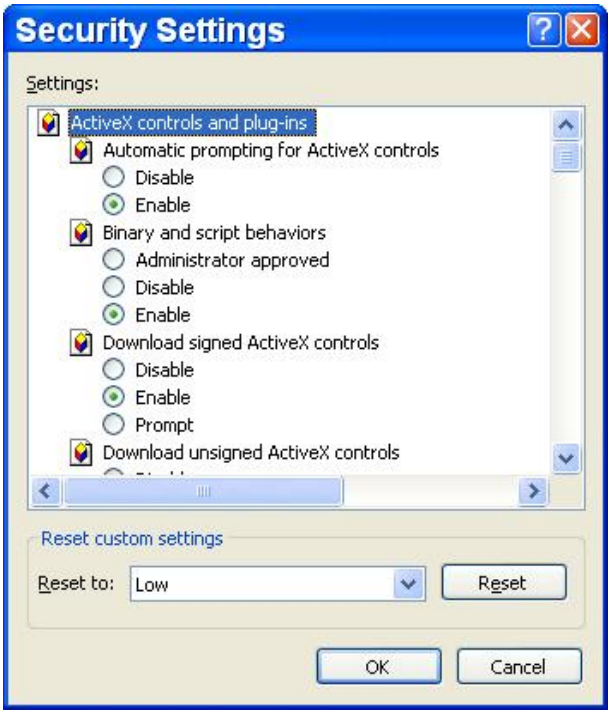
- Select <Tools> from the main menu of the browser, then <Internet Options>, and then click the <Security> tab.
- Select <Trusted sites> and click <Sites> to specify its security setting.



- Uncheck "Require server verification (https:) for all sites in this zone". Type the IP address of the unit in field and click <Add> to add this web site to the zone.



- Click <OK> to confirm the setting and close Trusted sites dialog.
- In the Security Level area, click <Custom Level>. The Security Settings screen is displayed.



- Under <All ActiveX controls and plug-ins>, set all items to <Enable> or <Prompt>.
- Click <OK> to apply the setting and close the <Security Settings> screen.
- Click <OK> to close Internet Options dialog.

Now you can continue with the rest of the installation.

5.2.2 Installing Remote Monitoring Software

Start the browser to initiate the installation of the remote monitoring software on your personal computer. You can save the IP address of the remote unit as a Favorites item in your web browser to have easy access next time.

- Start the IE; you may start it either by clicking on the desktop icon, or by using the Start menu to access it.
- Enter the IP address of your DVR series unit in the address bar at the top of the browser.
- The ActiveX controls and plug-ins dialog will show twice for confirmation; click <YES> to accept ActiveX plug-ins. The remote monitoring software plug-ins will be downloaded and installed on your PC automatically when the connection is successfully made.

NOTE: Do not enter any leading 0 characters in the address, for example, "192.068.080.006" should be entered as "192.68.80.6". If the default trigger port 80 is changed into another one, take port 81 for example, you should enter the IP address as "192.68.80.6:81".

- A version check starts to verify whether the remote monitoring software was installed already, and also check if the version is the same as that stored in that particular DVR series unit. This process may take up to 30 seconds.
- When the software is completely downloaded and installed, the Login Screen is now displayed.

5.2.2.1 Log in / Log off

You can log in using the <Admin> or <User> account. <Admin> account can perform unit configuration freely, while <User> account has more limitation on remote access to the unit.

One "Admin" and up to four "Users" can access a DVR series unit at the same time. Furthermore, if the "Admin" account is currently accessing the unit's OSD setup menu via front panel of the unit, then you cannot save information as an "Admin" on the remote monitoring software. The Admin account of the DVR series unit has priority.

The following steps demonstrate procedures to view video from remote unit:

- Start the remote monitoring software by entering the IP Address of the DVR series unit in the Address bar of the browser. Or you may click on the Favorite entry for the unit (if the IP address of the unit has been set).
- Enter your Username and password. You can save password in the list if needed. The default usernames and passwords are listed as below.

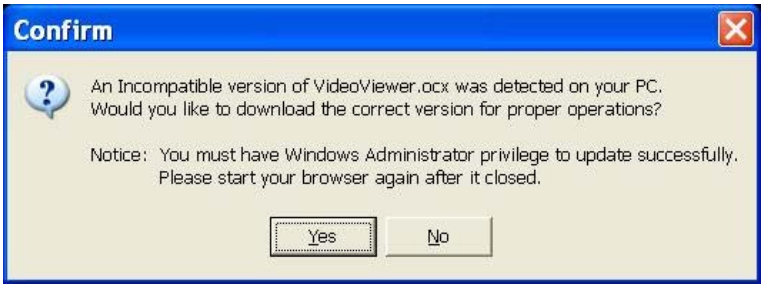
	Login Type	
Default User name	Admin	User
Default Password	1234	4321

- Click <OK> to log in to the DVR series unit. The process may take a few seconds.
- If the connection is made successfully, the main window will display live video of the attached cameras.

If you close the IE browser, you log off the system at the same time.

5.2.2.2 Software Upgrades

When a new version of the remote monitoring software is available on your DVR series unit, upgrade will be prompted when you access the unit. Follow the steps to upgrade the software.

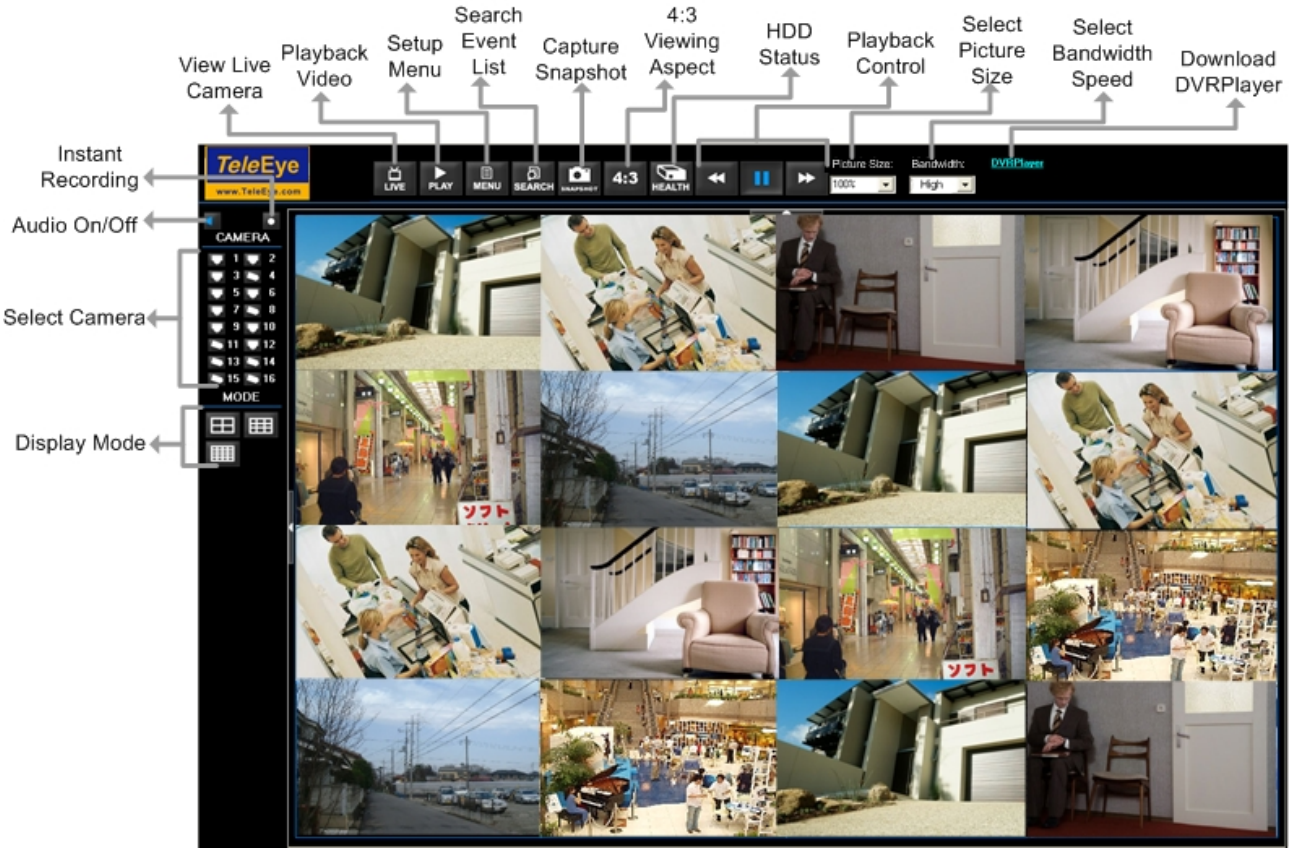


- The message as the above figure will be prompted. Click <Yes> to accept version upgrade.
- Start your IE again and enter the IP address of the DVR series unit in the Address bar of the browser; or if you have set a Favorite for the unit address, click the Favorites entry for your unit.
- When the software is completely downloaded and installed, the Login Screen will be displayed.

5.3 Basic Operation for Monitoring remotely

When you successfully connect to a DVR series unit, the main window of the remote monitoring software will display as follows. The connected cameras of the DVR series unit will be listed on the left and an array of camera output windows will display on the right of the main window.

To view the main window in full-screen view, press <F11> on your keyboard.



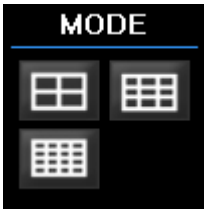
The functions on the remote monitoring software will be described in the following sections.

5.3.1 To View Live Video

You can view live video from the cameras attached to the DVR series unit by clicking <Live> button on the main window toolbar.

You can select desired display mode and assign wanted camera view to the window(s) after the live images of the DVR series unit are displayed on the main window. To select wanted display mode and assign camera, refer to the following sections.

5.3.1.1 Selecting Display Mode



You can choose the number of windows to be displayed on the main window. Click one of the display buttons on the left-bottom corner of the main window. You can select from 4, 9 and 16 camera displays. To view certain window in full screen, you may either double-click on the wanted window, or click on the corresponding CAMERA button.

5.3.1.2 Operating Cameras with Dome Control

The remote monitoring software allows you to control and configure a dome camera remotely.

Click on any CAMERA button displayed with a dome icon to view the camera in full screen. The Dome Control Panel (shown as right) will be displayed in the left-bottom side of the main window. The items on the dome control panel are described as follows.

Set Preset Points

This item is used to set up preset positions.

The remote monitoring software allows its user to set up to 255 preset positions with DynaColor, American Dynamics, Fastrax, JVC, Panasonic (C & N), and Pelco (Pelco P & Pelco D) domes.

Use Direction buttons to move dome camera to an appropriate position, and then click the button and choose wanted number from the pull-down list. The preset position is named as the selected number.

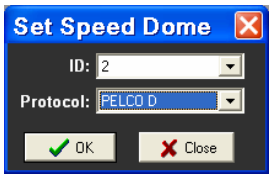
Go Preset Point

This item is used to call the camera preset point which was set up with the set preset point function. Click and choose a number to call the preset point for viewing.

A.F. (Auto Focus)

Click to automatically adjust the focus of the camera for a clear view.

ID (Dome ID Setup)



Click for changing the dome ID and protocol. User privileges in not allowed to change the dome ID and protocol; Admin privileges is required to access this function.

Focus

Use to adjust the camera lens to focus on objects for a clear view. Click the adjusting buttons to modify the focus setting.

Iris

This item is used to open and close the iris to let more or less light into the camera. Click the adjusting buttons to modify the iris setting.

Zoom

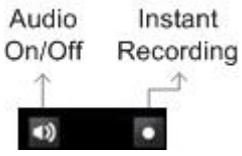
You are allowed to zoom-in or zoom-out using the adjusting buttons. Zoom-in to enlarge a certain area and zoom-out to view more area.

Direction Buttons

These buttons are used to pan and/or tilt the dome camera. Click the arrow button in the direction you want to view.

5.3.2 Instant Recording

The Instant Recording function allows you to record video quickly to your PC.



NOTE: The Audio function is set to OFF as the default setting.

5.3.2.1 Recording Video Instantly

Follow the steps to start recording instantly:

- Click on the <Instant Recording> button.
- Select the destination you want to save the video.
- Click on the button again to stop recording.

NOTE: The instant recording video will be saved as *.drv file.

5.3.2.2 To Playback Instant Recorded Video

Follow the steps to playback a video recorded by "Instant Recording".

- Click <Play> on main window toolbar and click <Local Playback> tab.
- Click <Open> to choose a recorded file.
- Click <OK> to start playing the recorded video.

5.3.3 To Take a Snapshot

The software allows you to take a snapshot through the hot key on the top of the main window. Each click takes a snapshot and it will be saved as a *.BMP file on the desktop of you PC. The snapshot file will be named as "Snapshot-*".

5.3.4 To Playback Video

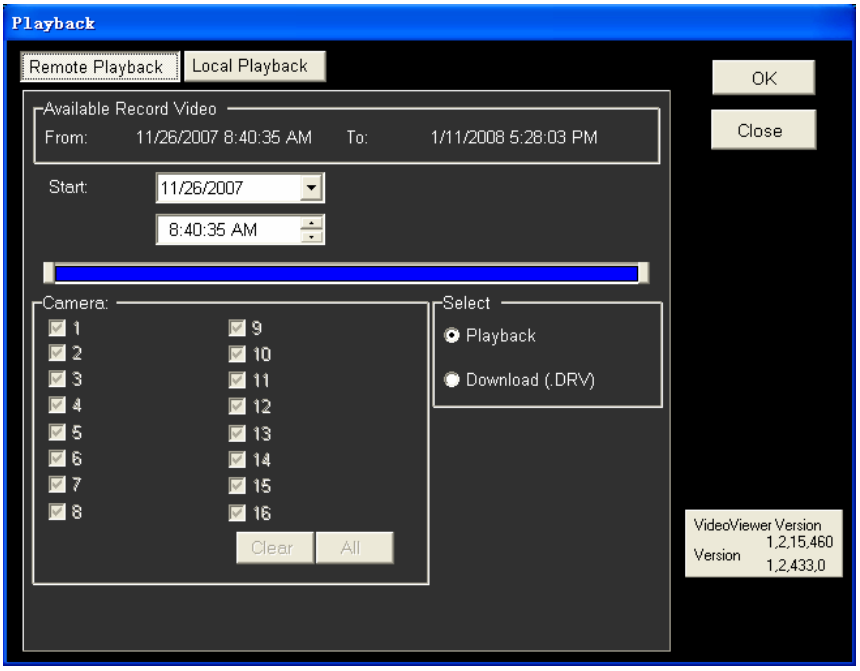
The remote monitoring software allows you to view recorded video either from the DVR series unit, or playback from the hard disk drive of your PC

To access the Playback screen, click <Play> button on the main window toolbar. There are three tabs in the Playback screen: <Remote Playback> and <Local Playback> tabs. <Remote Playback> allows you to play back from a DVR series unit. <Local Playback> enables you to playback a recorded video file stored on the hard disk drive of your PC.

The DVR series unit continues recording while you are playing back recorded video on your PC, either remote playback or local playback.

5.3.4.1 Playing Back Remote Video

To view remote video, click <Play> on the main window toolbar, and then <Remote Playback> tab. The <Remote Playback> screen will be displayed.



The <From> and <To> in the <Available Record Video> on top of the screen display the date and time from which recorded video is available for playback.

To playback remote video segments, follow these steps:

- Choose <Playback> in <Select> field for playback recorded video.
- Select the date and time of the segment to playback from the <Start> field.

- You can change the date and time either by typing desired numbers directly or using the arrow buttons.

  To type directly:

  Click on day, month and year of date field respectively, and type the desired numbers directly. Follow above steps to adjust the hour, minute and second of time field.

  To use the arrow buttons:

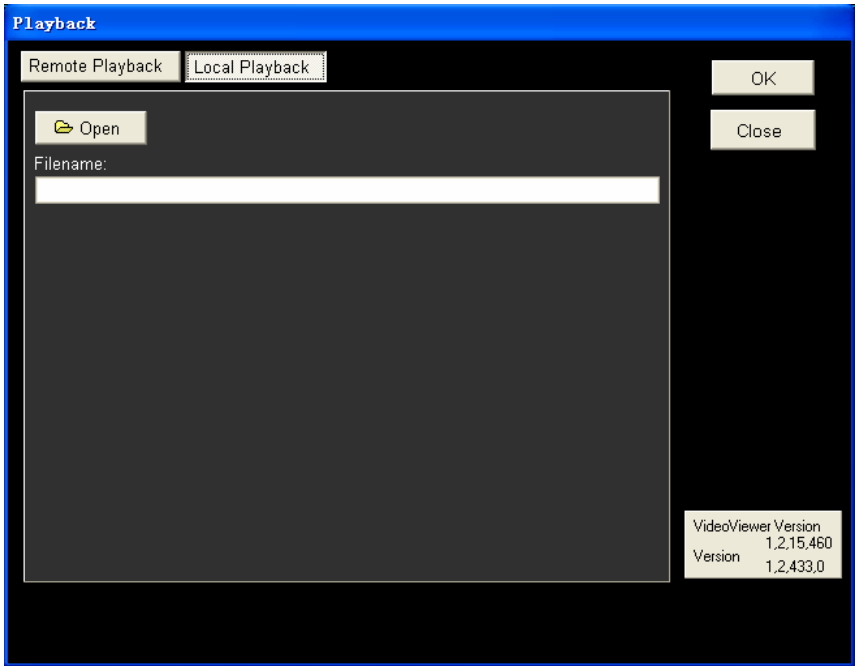
  Click on the arrow button next to the date field to display the calendar; then click the left and right arrow at the top of the calendar to change the date. Use up and down arrow next to the time field to change to the wanted time.

- The other way to select date and time is by moving the blue sliding bar in the center of the screen.
- Click <OK> to start the playback, or click <Close> to abort.
- The other option <Download (.DRV)> in <Select> field enables the user to download the video segment of selected date and time to the PC. The selection of time duration is the same as described above. Files downloaded will be in *.drv format.

5.3.4.2 To Playback Local *.drv Files

The <Local Playback> tab allows you to playback *.drv video files stored in your PC's hard drive.

Click the <Local Playback> tab in the <Playback> screen. The Local Playback screen is shown as below.

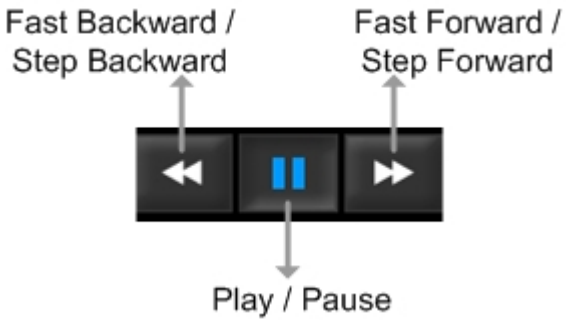


Follow below steps to play back a downloaded *.drv file with the remote monitoring software.

- Click <Open> and the file selection screen is displayed.
- Select the *.drv video file to playback and click <OK>.
- Click <OK> in the <Local Playback> Screen to start the playback, or click <Cancel> to abort.
- View the video playback using the Playback controls.
- To end the playback, click <Live> to return to live video.

5.3.4.3 Playback Controls

When playing back local or remote video, the remote monitoring software is in Playback Mode. The playback controls toolbar will emerge on the main window toolbar, as shown in the following figure.



The Playback controls and indicators are described as below.

Fast Backward

Click to play the recorded video in reverse direction. Click repeatedly to select the rewind speed: 1x, 2x, 4x, 8x, 16x, or 32x.

Play / Pause

Click once to play the recorded video; click again to pause the playback.

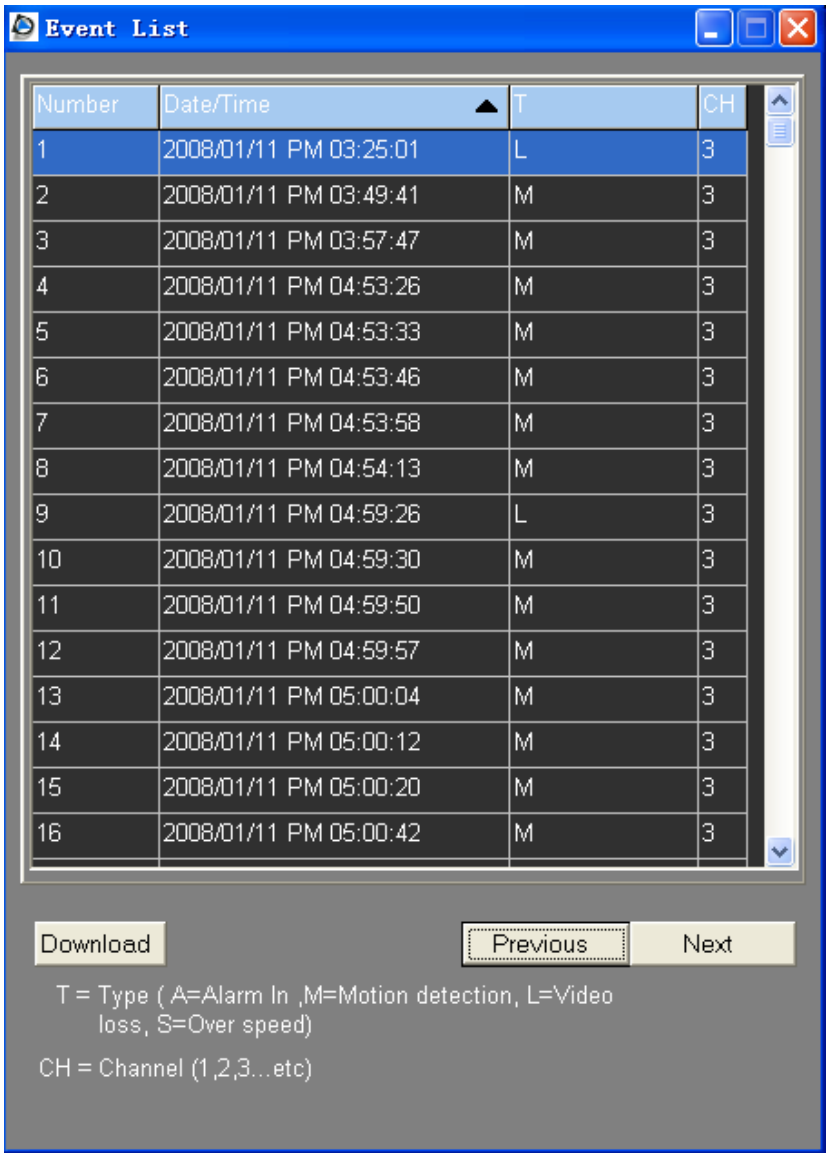
Fast Forward

Click to play the recorded video forward. Click repeatedly to select the forward speed: 1x, 2x, 4x, 8x, 16x, or 32x.

5.3.5 Search from Event List

Click SEARCH, the Event List appears. The List contains information about the alarm events that your unit recorded and saved. Up to 1024 events can be listed in the Event List.

The Event List (shown as below figure) displays each event by its number, the date and time of the event, the type of the event (including Alarm In, Motion Detection, Video Loss, and Over Speed), and the camera channel where the event occurred.

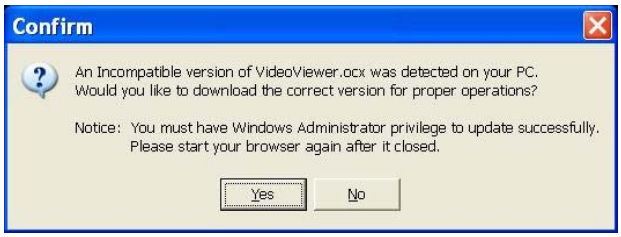


To view an event video, follow these steps:

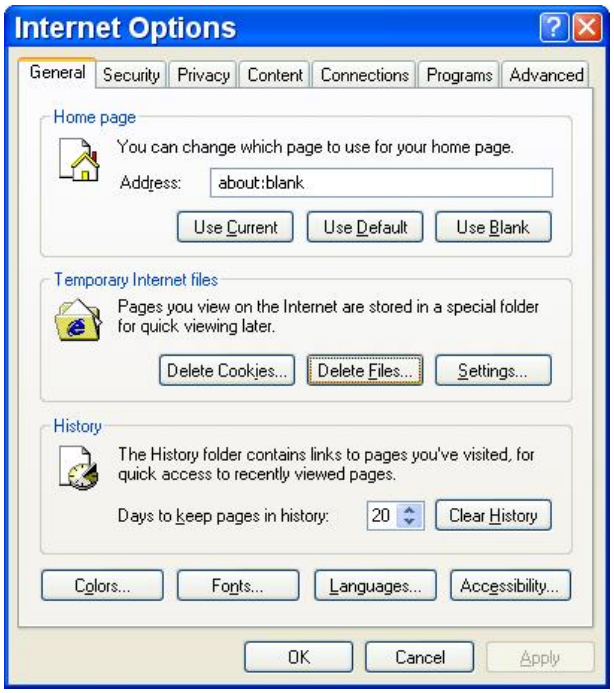
- Click SEARCH button positioned in the main window toolbar. The Event List appears.
- Scroll through the Event List and highlight the interested events.
- Double-click on the desired event to view the event video.

5.3.6 Remote Monitoring Software Trouble Shooting Guide

What if the server ask to upgrade the software every time when you try to connect to the DVR series unit unit? If the following screen displays repeatedly, please follow the steps to delete the temporary internet files.



- Select <Tools> from the main menu of the web browser, then <Internet Options>, and then click the <General> tab.



- Click the <Delete Files> button in the <Temporary Internet Files> field; the <Delete Files> screen displays as below.

- Check the <Delete all offline content> box and click <OK>.
- Now, enter the IP address of your DVR series unit to make the connection again.

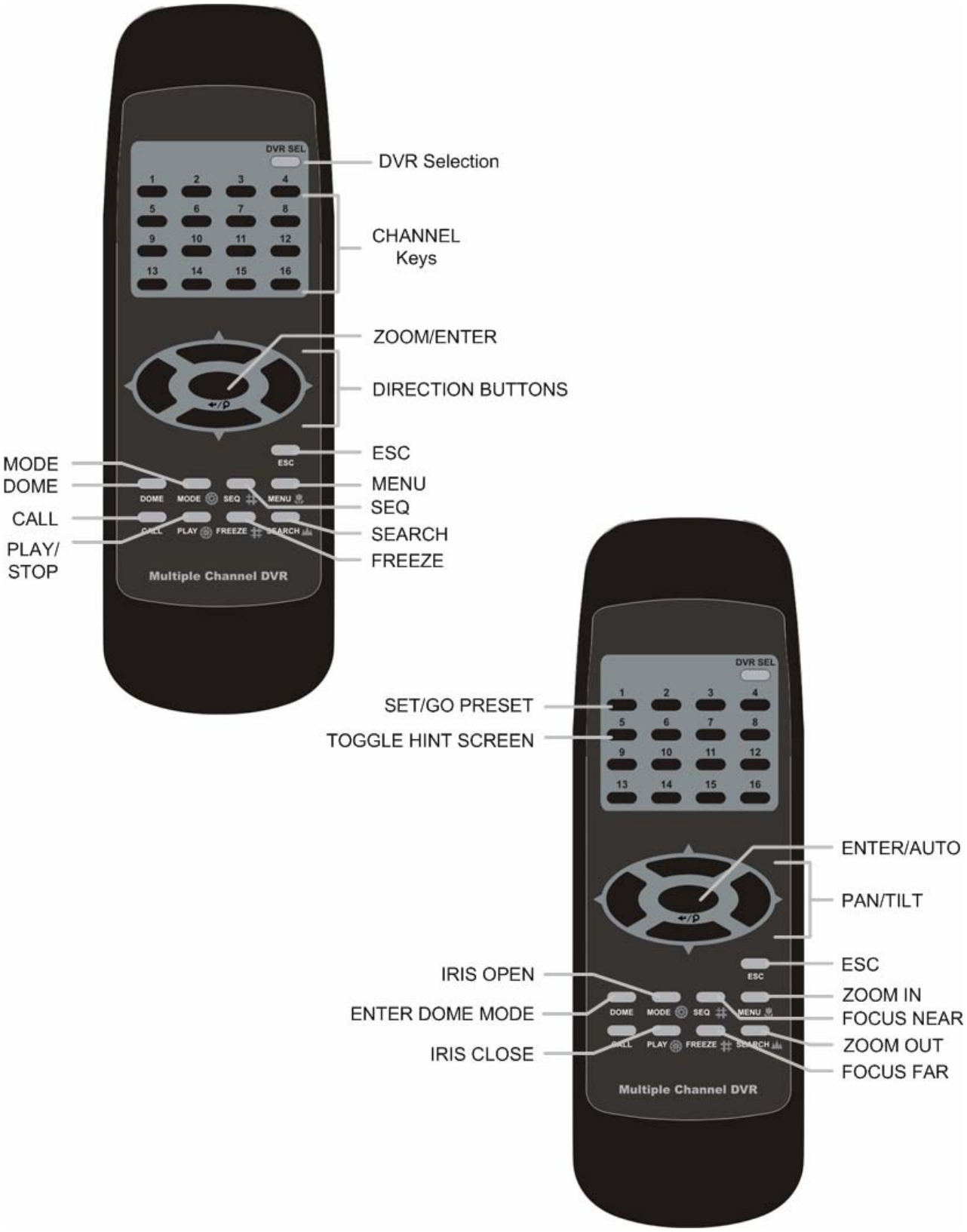
Appendix A: Technical Specifications

		RN684	RN688	RN6816
INPUT STANDARD		PAL/CCIR: 625 lines, 25 frames per second		
		NTSC/EIA: 525 lines, 30 frames per second		
		Composite video, 1Vp-p, BNC, switchable		
INPUT CHANNELS		4	8	16
OUTPUT STANDARD	Main Monitor	BNCx1, 1.0Vp-p, 75 ohm		
	Call Monitor	-	BNCx1, 1.0Vp-p, 75 ohm	
	VGA (Optional)	800x600, 1024x768, 1280x1024 pixels		
COMMUNICATION NETWORK		TCP/IP, DHCP, DDNS		
CONCURRENT USERS		2		
RECORDING MODE		Schedule / Motion / Alarm / Remote		
RECORDING RESOLUTION		D1 (PAL: 720x576 / NTSC: 720x480)		
		Half D1 (PAL: 720x288 / NTSC: 720x240)		
		CIF (PAL: 368X288 / NTSC: 360X240)		
HD TYPE		IDE interface, ATA66, 2 internal		
COMPRESSION FORMAT		MPEG-4, Advanced Simple Profile		
MAX RECORDING RATE		PAL: 25fps (720X576); 100fps (360X288)		
		NTSC: 30fps (720X480); 120fps (360X240)		
PLAYBACK SCHEDULE		Date, time, event		
PLAYBACK SPEED		1X, 2X, 4X, 8X, 16X, 32X		
ALARM IN/OUT		4 inputs, 1 output	8 inputs, 1 output	16 inputs, 1 output
AUDIO IN/OUT		2 inputs, 2 outputs		
BACKUP DEVICE		CD-RW, USB		
TELEMETRY STANDARD		RS-485, 1200, 2400, 4800, 9600, 19200bps		
TELEMETRY PROTOCOL		Pelco P, Pelco D, AD422, Fastrax 2, JVC, Panasonic_C, Panasonic_N		
OPTIONAL PERIPHERAL		VGA converter		
VOLTAGE		External Adapter, AC 100~240V to DC 12V		
MAX. RATING		96W		
AMBIENT TEMPERATURE		0°C ~ 40°C		
RELATIVE HUMIDITY		30% ~ 90% (no condensation)		
DIMENSION		440mm (W) x 50mm (H) x 340mm (D)		
WEIGHT		4.9kg		

**All specifications are subject to change without notice.

Appendix B: Remote Controller

A remote control is provided for the DVR unit. The function keys on the remote control are listed as below figure:



The keys of the remote control function as the keys of the front panel of the DVR. The only difference between the remote control and the front panel keys is the "DVR SEL" key. The DVR Selection key is used to switch control between each DVR.

The remote control can be used to control up to 16 DVRs. To setup the remote control, the first thing you need to do is to assign a unique DVR Unit ID to each DVR.

Use the front panel of the DVR, and follow this path to change the DVR Unit ID, <Main Menu> → <System Setup> → <RS485 Setup> → <Unit ID>
Change the DVR Unit ID to any number between 224 and 239, and exit the menu.

The ID Table is listed below for your reference.

DVR Unit ID	224	225	226	227	228	229	230	231
Remote Control #	1	2	3	4	5	6	7	8

DVR Unit ID	232	233	234	235	236	237	238	239
Remote Control #	9	10	11	12	13	14	15	16

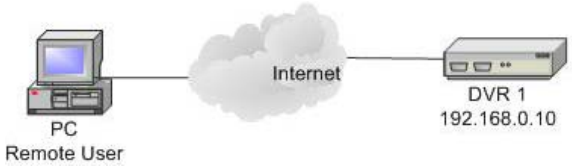
After the DVR Unit ID is changed, you will need to setup the "DVR SEL" of the remote control. Press "DVR SEL", and then press the Remote Control # immediately to select the DVR. For example, assuming that you have set the DVR Unit ID to 225, then you should press "DVR SEL", and then press "2" immediately. Now, the remote control will only be able to control the specified DVR. Press "DVR SEL", and then press the Remote control # to switch between DVRs.

If you want to exit the single DVR control mode, press "DVR SEL", and then press "ESC" to do so.

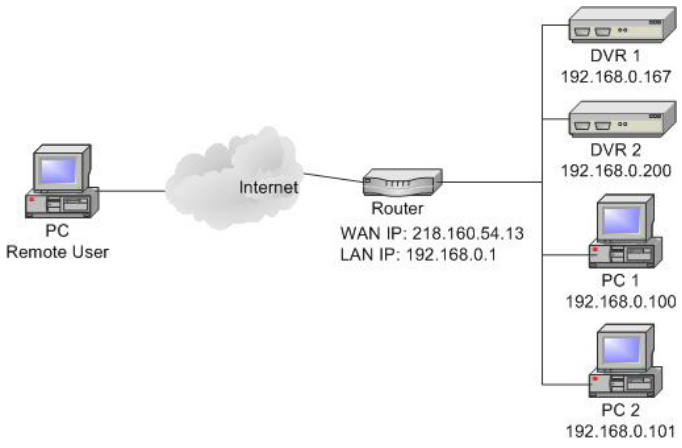
Appendix C: Setting up a DVR behind a Router

This appendix describes how to set up a router if the DVR connects to the internet via a router.

To properly operate a web server, e.g. a DVR, the user has to set up both the IP and port of the DVR, which are essential for data and command transmission. The port setting is adjustable in OSD setup menu of the DVR and only one port is needed to do remote operation. Typically and by the default, the DVR operates on port 80, which is well known as the http port. Please make sure that port 80 is not blocked by your ISP or you will have to find another available port and change the setting of the DVR.



In case a router or sometimes a DSL modem is in place, the real IP is now assigned to the router instead of the DVR. The DVR is located behind the wall (router) and operates on virtual IP. In most cases, virtual IP starts with 192.168.x.x. The router has two IP: one is real IP (WAN IP), the other is virtual IP (LAN IP). The virtual IP would be 192.168.x.1. When the remote user wants to operate the DVR, he will have to send command to the real IP, i.e. the router. Then the router has to map (forward) the command to the DVR. Thus it is required to set up the router for port mapping (forwarding) before you can remotely see image from your DVR.

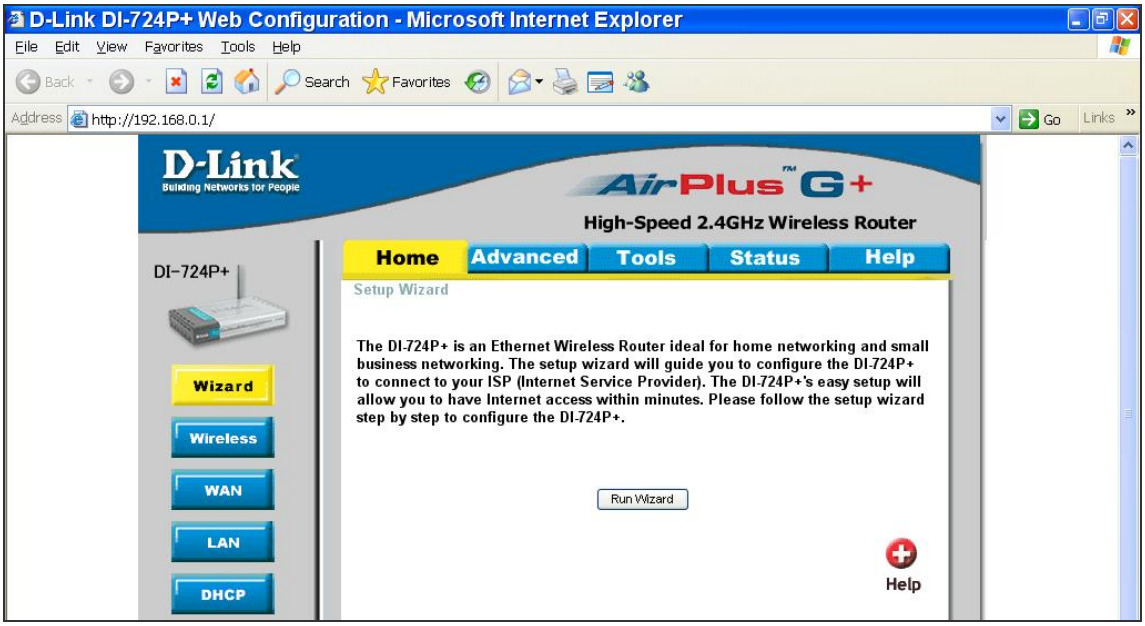


See your router manufacturer's websites for more instructions on port mapping.

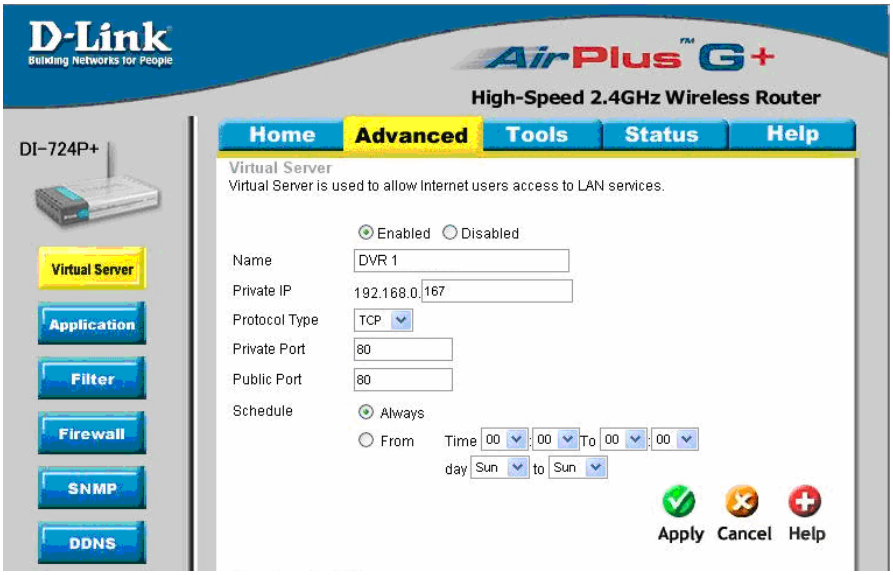
Following is an example of how the router should be set.

Router (D-Link DI-724P+) WAN IP: 218.160.54.13 LAN IP: 192.168.0.1	PC IP: 192.168.0.100	DVR 1 IP: 192.168.0.167 Trigger port: 80	DVR 2 IP: 192.168.0.200 Trigger port: 81

- To change the setting of the router, you need a PC with web browser.
- Connect to D-Link DI-724P+ from PC via IE. The setup screen will be shown after entering the correct username and password.



- Click the <Advanced> tab and follow the steps to set up web port forward to DVR 1.



A. Select <Enabled> to set up the service.
B. Enter the name of the setting in the Name field: DVR 1.
C. Enter Private IP: 167
D. Choose <TCP> as the Protocol Type.
E. Enter Private Port: 80.
F. Enter Public Port: 80.
G. Click <Always> for the Schedule setting.
H. Click <Apply>.

- Click <Continue> to go on when the following screen displays.

- Follow the steps to set up web port forward to DVR 2.
  A. Click <Enabled> to set up the service.
  B. Enter the name of the setting in the Name field: DVR 2.
  C. Enter Private IP: 200
  D. Choose <TCP> as the Protocol Type.
  E. Enter Private Port: 81.
  F. Enter Public Port: 81.
  G. Click <Always> for the Schedule setting.
  H. Click <Apply>.

- Now you can see DVR 1 via http://218.160.54.13:80 and DVR 2 via http://218.160.54.13:81.

- If there are more than one DVR behind the router, repeat the steps for port mapping setting.